

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,401,351 B2
APPLICATION NO. : 09/738905
DATED : July 15, 2008
INVENTOR(S) : John Boreczky et al.

Page 1 of 9

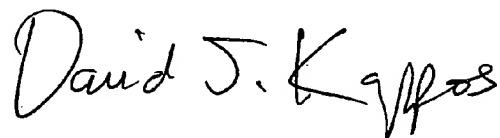
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The title page showing an illustrative figure, should be deleted and substitute therefor the attached title page.

The sheets of drawings consisting of figures 1-9 should be deleted and substitute therefor the attached figures 1-9.

Signed and Sealed this

Twenty-seventh Day of July, 2010

A handwritten signature in black ink that reads "David J. Kappos". The signature is written in a cursive, flowing style with a large, stylized 'D' and 'K'.

David J. Kappos
Director of the United States Patent and Trademark Office

(12) **United States Patent**
Boreczky et al.

(10) **Patent No.:** **US 7,401,351 B2**
(45) **Date of Patent:** **Jul. 15, 2008**

(54) **SYSTEM AND METHOD FOR VIDEO
NAVIGATION AND CLIENT SIDE INDEXING**

6,721,490 B1 * 4/2004 Yao et al. 386/69

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William N. Schilit, Menlo Park, CA
(US)

U.S. Appl. No. 09/266,637, filed Mar. 11, 1999, Foote et al.
U.S. Appl. No. 09/267,529, filed Mar. 12, 1999, Uchihashi et al.
U.S. Appl. No. 09/322,842, filed May 28, 1999, Girgensohn et al.
U.S. Appl. No. 09/611,389, Chiu et al.
Arman, F., et al., "Content-based Browsing of Video Sequences," *In Proceedings of the 6th ACM International Conference on Multimedia*, San Francisco, California (1994) pp. 97-103.
Boreczky, J., et al., "Comparison of Video Shot Boundary Detection Techniques," *In Storage and Retrieval for Still Image and Video Databases IV, Proc. SPIE 2670*, San Jose, California (1996) pp. 170-179.

(73) Assignee: **Fuji Xerox Co., Ltd.**, Tokyo (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1101 days.

(Continued)

(21) Appl. No.: **09/738,905**

Primary Examiner—Hunter B. Lonsberry

(22) Filed: **Dec. 14, 2000**

(74) Attorney, Agent, or Firm --Fliesler Meyer LLP

(65) **Prior Publication Data**

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(51) **Int. Cl.**
H04N 7/173 (2006.01)

(52) **U.S. Cl.** **725/88; 725/89; 725/90;**
725/93

(58) **Field of Classification Search** **725/86-95;**
345/721, 723-725
See application file for complete search history.

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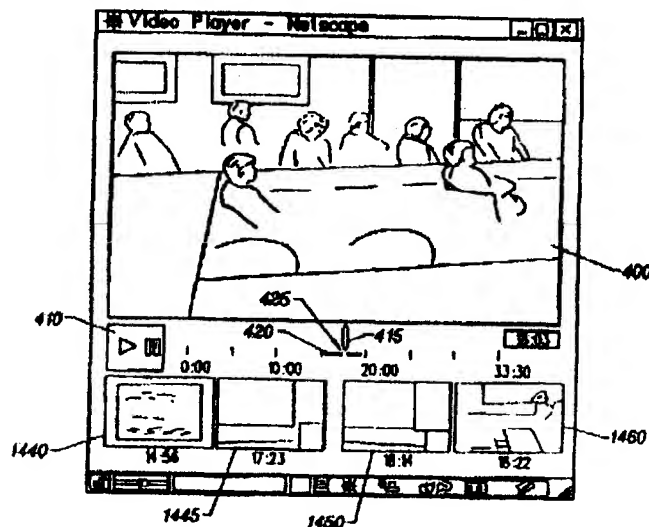
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(57) **ABSTRACT**

A system is provided where a number of representative video snapshots are displayed on a timeline indicating a position to jump to in a video using control buttons, such as fast forward, reverse, or a timeline scroll bar. The video snapshots are obtained by opening a low resolution connection to a video server to receive forward looking video segments. The forward looking video segments are summarized and the representative video snapshots are selected and displayed to provide a reference frame for the user to select a timeline position, or snapshots directly linked to positions in the higher resolution video. Backward looking video segments may be similarly summarized from the low resolution connection, or alternatively from video previously played. As the video progresses, new forward looking video segments are received and new representative video snapshots are summarized and displayed in close proximity with the video being played.

20 Claims, 7 Drawing Sheets



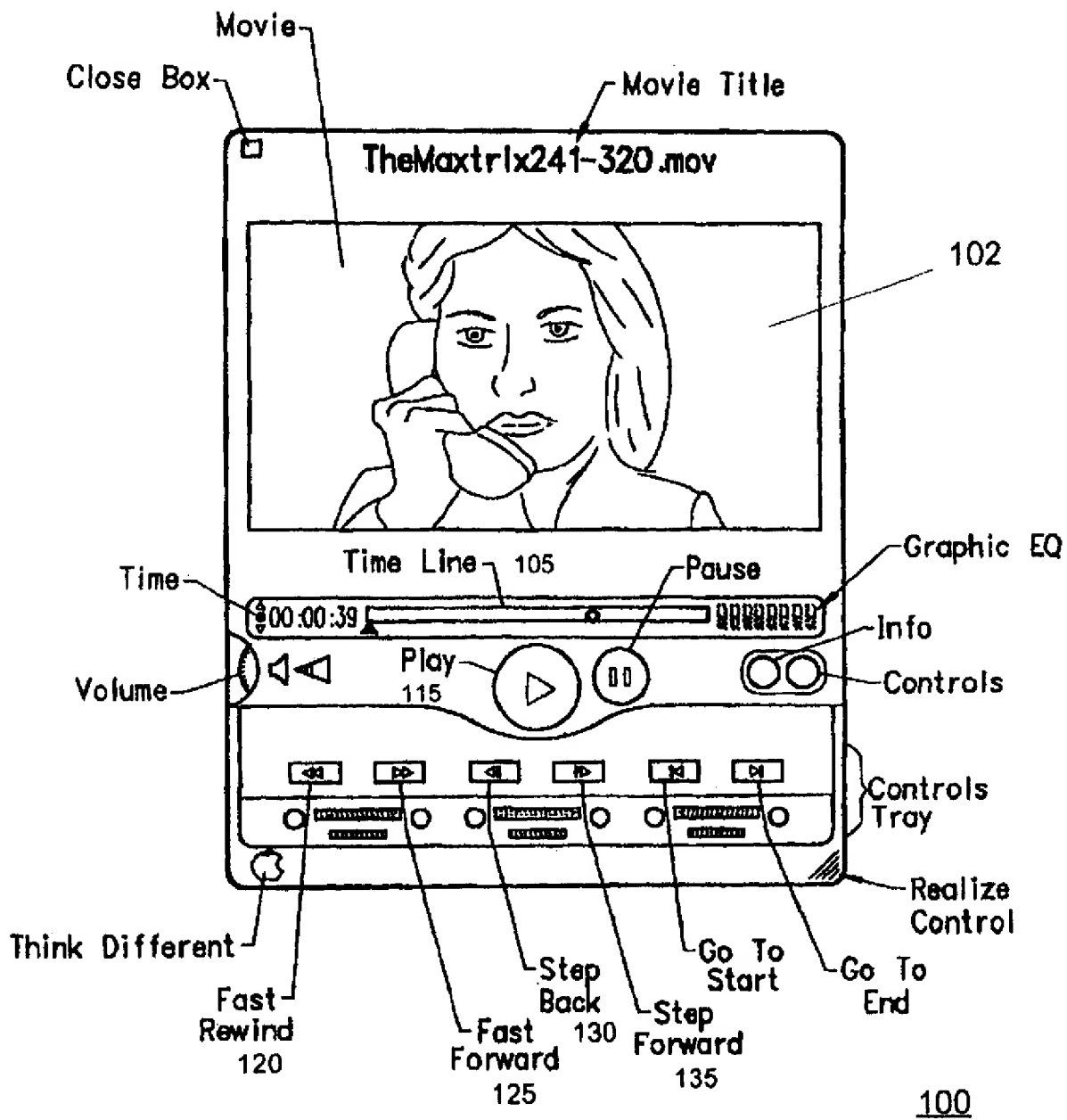


FIG. 1

Prior Art

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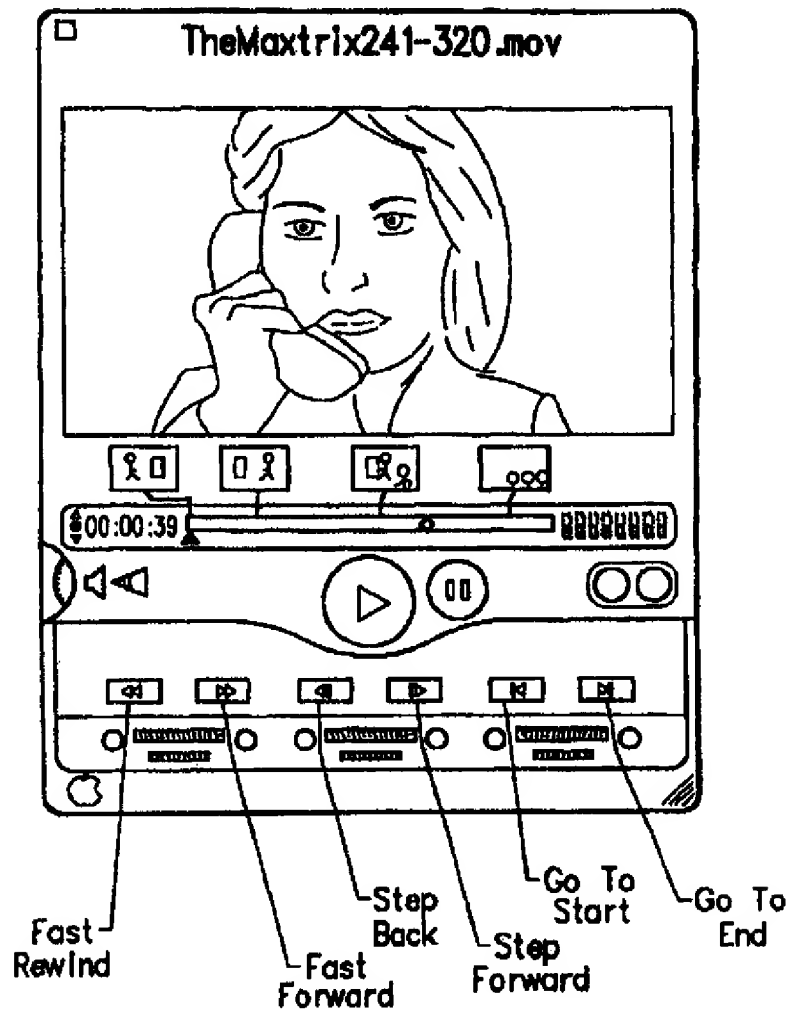


FIG. 2

Prior Art

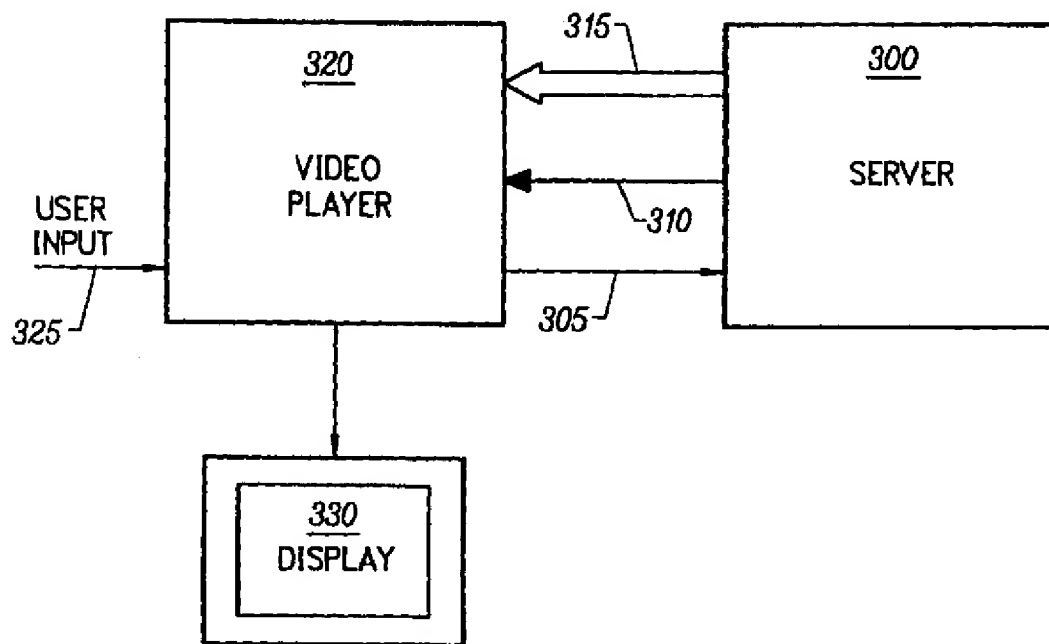


FIG. 3

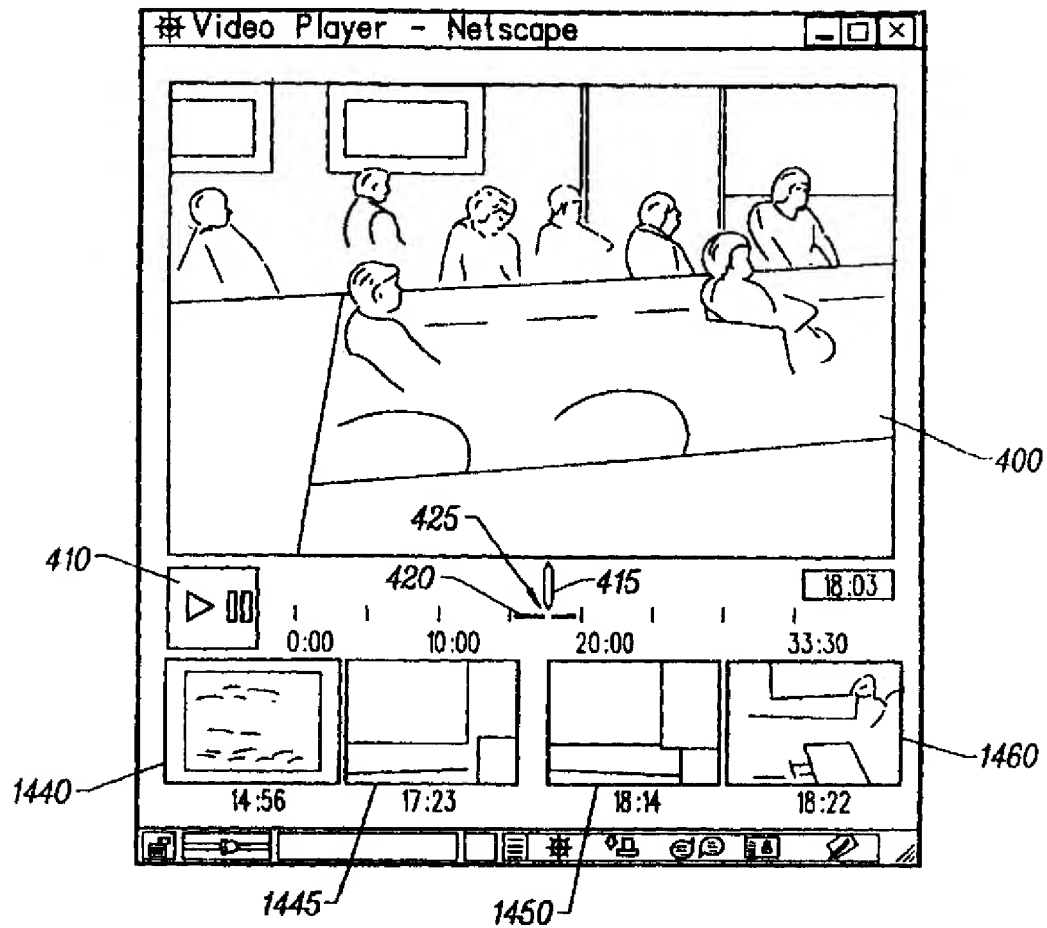


FIG. 4

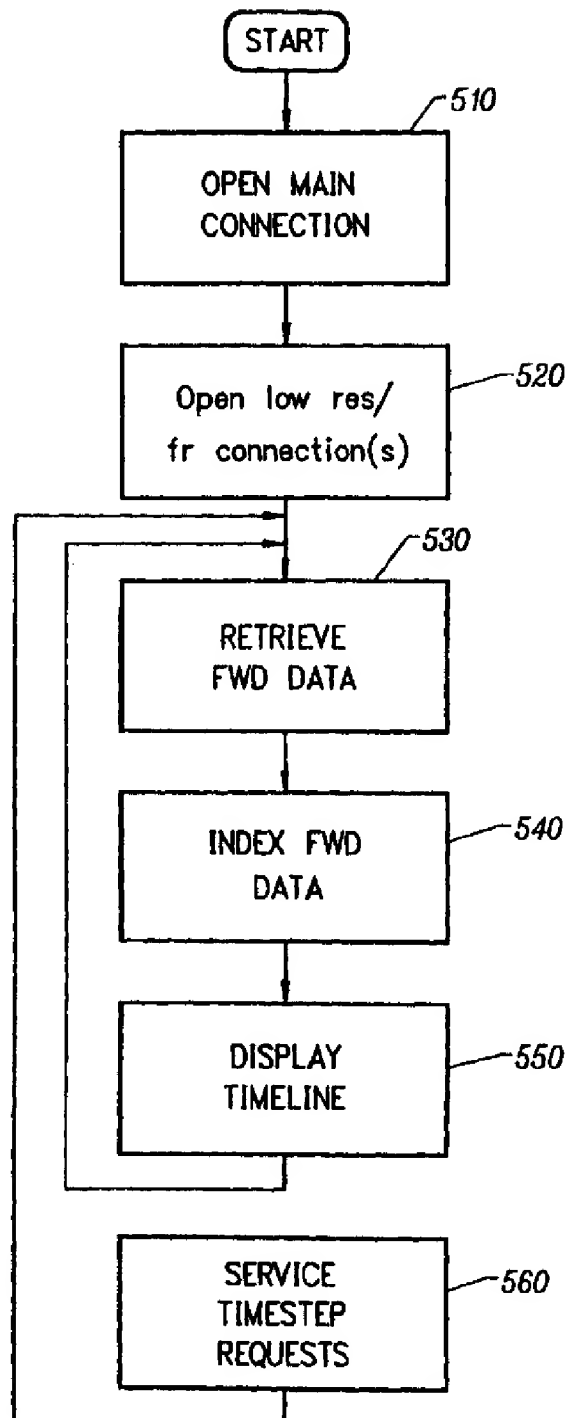


FIG. 5

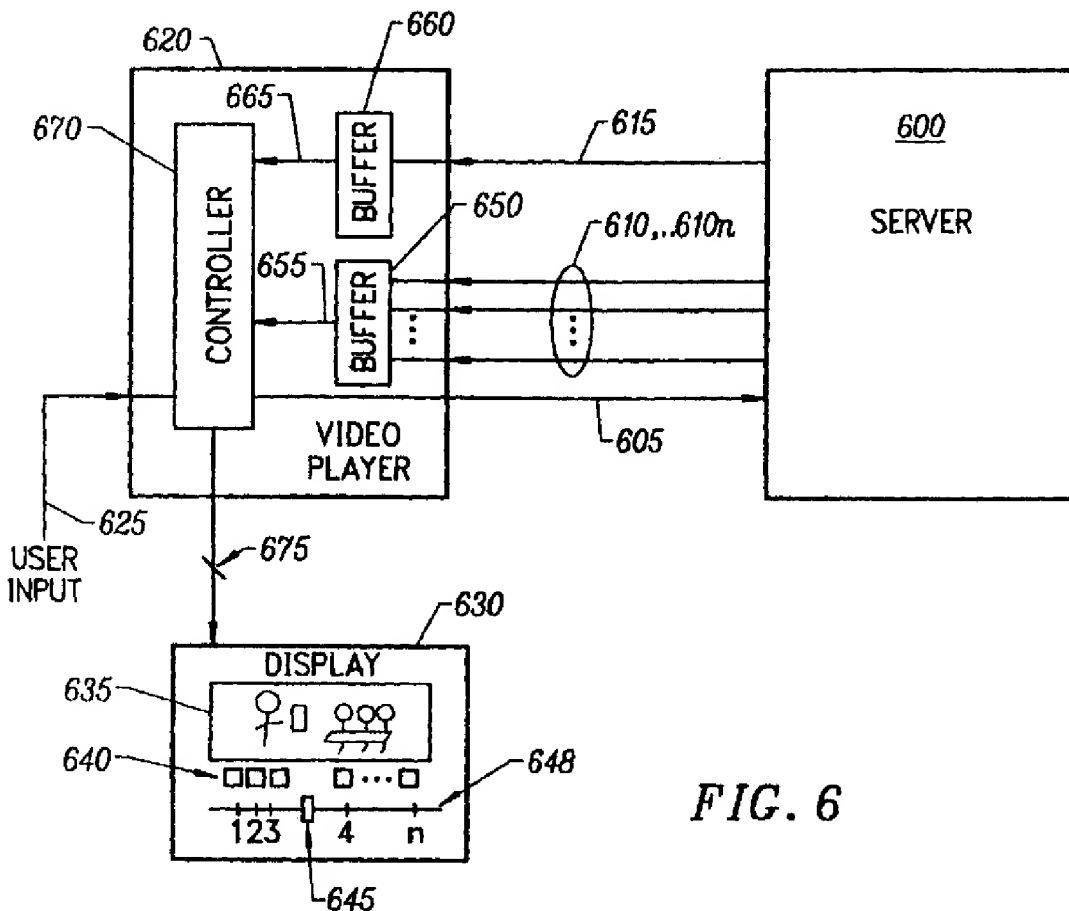


FIG. 6

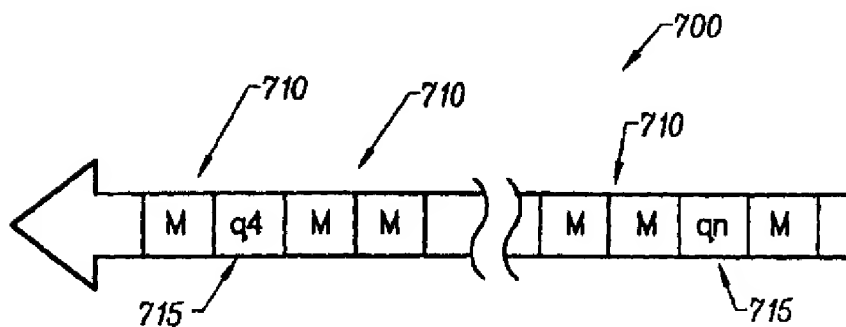


FIG. 7

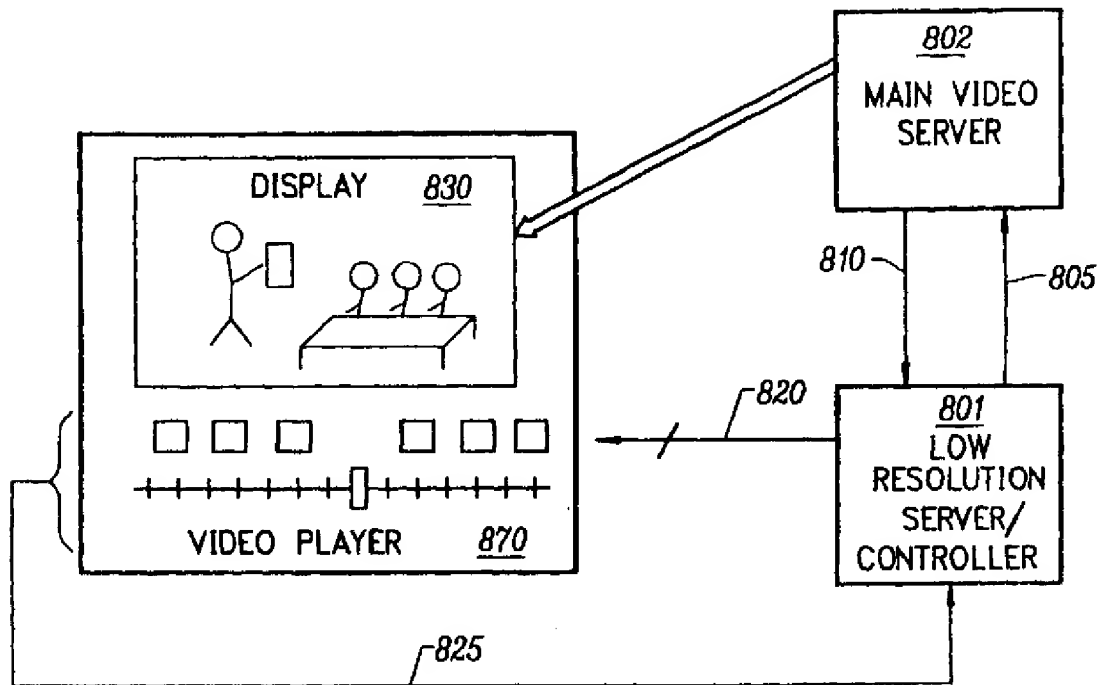


FIG. 8

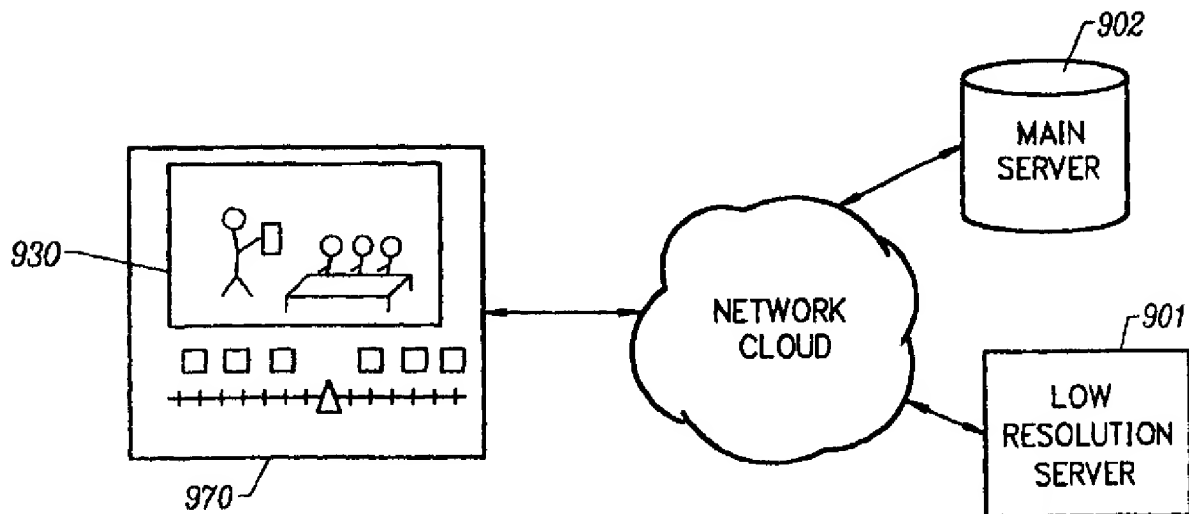


FIG. 9